

MULTILAYERED CAP BARRIER IN MICROELECTRONIC
INTERCONNECT STRUCTURES

ABSTRACT OF THE DISCLOSURE

Structures having low-k multilayered dielectric diffusion barrier layer having at least one low-k sublayer and at least one air barrier sublayer are described herein. The multilayered dielectric diffusion barrier layer are diffusion barriers to metal and barriers to air permeation. Methods and compositions relating to the generation of the structures are also described. The advantages of utilizing these low-k multilayered dielectric diffusion barrier layer is a gain in chip performance through a reduction in capacitance between conducting metal features and an increase in reliability as the multilayered dielectric diffusion barrier layer are impermeable to air and prevent metal diffusion.